

REMARKS

I. Status of Previous Office Action

The Office Action issued August 27, 2007 is listed in PAIR as being a “Non-Final Rejection”. The Office Action Summary Form, PTOL-326, included with the Office Action also notes that “This action is non-final” by virtue of checkbox (2b) being checked. The Office Action does not include the statement “This action is made final”. For at least these reasons, this Office Action issued August 27, 2007 has been treated herein as being “Non-Final”.

II. Status of Claims

Prior to entry of this paper, Claims 1-2, 4, 5, 7-14, and 16-24 were pending. Claims 1-2, 4, 5, 7-14, and 16-24 were rejected. In this paper, Claims 1 and 22-24 are amended. Claims 1-2, 4, 5, 7-14, and 16-24 are currently pending. No new matter is added by way of this amendment. For at least the following reasons, it is respectfully submitted that each of the presently pending claims is in condition for allowance.

III. Claim Rejections - 35 U.S.C § 103

Claims 1 and 22-24 were rejected under 35 U.S.C. 103(a) as being anticipated by Arbouzov, U.S. Patent No. 5,701,487 (hereafter “Arbouzov”) and in view of Birum et al., U.S. Patent No. 7,100,152 (hereafter “Birum”).

With this paper, Claim 1 has been amended to further clarify its distinction, and thus patentability, over the prior art of record. Specifically, Claim 1 has been amended to recite that the “one or more of the files examined comprises a history of one or more errors in the software system generated during execution of the one or more responsible software components included in the

software system". Support for this amendment can be found throughout the specification of the application, as originally filed, but particularly on page 2, lines 11-14 and page 7, lines 14-23.

After thoroughly reviewing the grounds of rejection applied in the previous Office Action, it is respectfully submitted that none of the prior art of record anticipates alone, nor does it render obvious in combination, the limitations of Claim 1, as amended.

For example, Arbouzov does not teach or suggest at least the "one or more errors" as they are further represented in the limitations of Claim 1. Particularly, Arbouzov does not teach or suggest the aspect of these "one or more errors" represented in the amended limitation, "a history of one or more errors in the software system generated during execution of the one or more responsible software components in the software system". Rather, the "errors" in Arbouzov are generated "during compilation of a source program containing a macro call" (col. 1, lines 46-67), wherein the contents of this "source program", such as the symbol "AR", are clearly the basis of the error and the generated error messages (col. 5, lines 23-28; col. 8, lines 13-18). This "source program" is not disclosed as having the proper format to be "executed by a computer". Instead, an "object program" has the "format that is easily understood and executed by a computer". This "object program" is the result of inputting the "source program" into a compiler, which "converts the source program into an 'object program'" (col. 1, lines 19-21). As such, Arbouzov clearly defines a difference between the operations of "compiled" and "executed" and between a "source program" and an "object program". Thus, so far as the "errors" in the system of Arbouzov are disclosed to "occur during the compiling step" of "compiling the source program", it is respectfully submitted that Arbouzov does not teach or suggest "a history of one or more errors in the software system generated during execution of the one or more responsible software components" as is further represented in the limitations of Claim 1 (col. 2, lines 6-22 of Arbouzov).

It is further noted that the "executing software instructions" of col. 6, lines 10-14 of Arbouzov, as cited on the last two lines of page 2 of the most recently issued Office Action, pertain to the instructions executed in the preprocessor or the compiler (108)(col. 6, lines 10-19). While the execution of these instructions result in the pre-processing and compilation of the "source program"

(col. 6, lines 14-16; col. 7, lines 52-53), this handling of the source program does not teach or suggest “execution of the one or more responsible software components”. As noted above, the contents of the “source program” are clearly the basis of the error and the generated error message (col. 5, lines 23-28; col. 8, lines 13-18), and Arbouzov clearly differentiates between “compilation of a source program” and an “object program” that may be “executed by a computer”. Accordingly, it is respectfully submitted that this section of Arbouzov cannot be relied upon to teach or even suggest “one or more errors in the software system generated during execution of the one or more responsible software components” as is represented in the amended limitations of Claim 1.

It is hereby acknowledged that Arbouzov alone was not relied upon for teaching all aspects of limitations pertaining to the “one or more errors”. However, for at least the above reasons, it is respectfully reiterated that Arbouzov does not anticipate all of the limitations of Claim 1, particularly when such limitations are taken as a whole and considered in their entirety. The above remarks also serve as a basis for the relative discussion of Birum, as follows.

It is respectfully submitted that the teachings of Birum cannot be combined with those of Arbouzov to arrive at the claimed invention. The types of errors involved in the two teachings apply to two different types of program code, source code and executable code. Both types of code, along with their differences, are acknowledged in both references (col. 1, lines 17-21 of Birum; col. 1, lines 14-25 of Arbouzov). It is respectfully submitted that teachings applied to the two types of code cannot be interchangeably applied in order to arrive at the claimed invention.

As noted in the Office Action, the errors that are subject to the teachings of Birum occur “following the compilation of the software code, when the code is executable” (page 3, lines 4-7 of Office Action; col. 1, lines 17-32 of Birum). The methods and teachings of Arbouzov, however, pertain to errors “during compilation of macro calls” in “(col. 1, lines 63-65). Macro calls and macro expansion are associated with the “source program” (col. 1, lines 33-45). As noted above, this source program is converted (i.e., compiled) into a format that may be executed by a computer (col. 1, lines 14-25 of Arbouzov). Thus, the macro errors in the system of Arbouzov exist prior to the object code being “executable” and pertain to information that precedes the existence of

executable code (i.e., data regarding macro expansion of the source code). It is at best unclear how errors during execution, such as the “specific memory errors” or “if the software performs its task correctly” (col. 1, line 25; col. 6, lines 25-33 of Birum) would be applicable to this pre-execution information, such as the “history of macro expansion”, collected in Arbouzov. Since the “history of macro expansion” and the “sources”, “tokens”, and “destinations” captured therein (col. 3, lines 47-54 of Arbouzov) all pertain to inserting programming constructs into points in the source program (col. 1, lines 33-45 of Arbouzov), and not the resulting performance of the object code, it is respectfully submitted that these two teachings cannot be operably combined as would be necessary for a rejection under 35 U.S.C. 103(a). The resulting combination would not arrive at certain limitations such as “a history of one or more errors in the software system generated during execution of the one or more responsible software components in the software system”, again, since the history of macro expansion would not pertain to the execution of a resulting object program.

In fact, it is respectfully submitted that a token that includes an expansion error, such as an undefined symbol (col. 5, lines 49-49-55 of Arbouzov), would not result in executable object code. The lack of definition would prevent such execution. Thus, “determining if the software is executing correctly as suggested by Birum” would not be possible, since the software would not be able to be executed (again, because at least one portion is undefined). Conversely, object code that is executable in the system of Arbouzov would not incur the use of the history of macro expansion stored in destination and source tables (step 904, Figure 9), because a compilation error would not have occurred. Again, the underlying point is that such a combination would not arrive at all of the limitations of Claim 1, as amended.

It is further noted that the Office Action does not include a statement pertaining to the proposed modification of the applied references necessary to arrive at the claimed invention. The indication “combine Arbouzov and Birum” does not indicate how the two references would be modified (page 3, line 9 of the most recent Office Action). As noted above, it is respectfully submitted that Arbouzov and Birum cannot be combined in a manner apparent from the cited prior art. For at least these reasons, it is respectfully submitted that the rejection under 35 U.S.C. § 103(a) is improper and it is respectfully requested to be withdrawn.

So far as Claims 22-24 include limitations similar to those discussed above, it is respectfully submitted that the above presented remarks are also applicable to these claims. For at least the same reasons listed above, it is respectfully submitted that Claims 22-24 are allowable over the prior art of record and the rejections thereto are respectfully requested to be withdrawn.

Claims 2, 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov and in view of Birum as applied in Claim 1 in view of Chung et al., U.S. Patent No. 6,745,348 (hereafter “Chung”).

Chung discloses a system for estimating the number of internationalization faults in a software program based on a scanning a subset of the total lines of code of the software program (Abstract). However, this scanning and estimation process occurs before testing and debugging (“estimate the number of software developers to be assigned to test and debug”) (col. 1, lines 43-63). As such, it is respectfully submitted that Chung also fails to teach or suggest all aspects of the claimed “one or more errors”, including “one or more of the software components responsible for the errors” and “a history of one or more errors in the software system generated during execution of the one or more responsible software components included in the software system” as is further claimed in Claim 1. So far as Claims 2 and 16 incorporate these limitations by virtue of their dependence on Claim 1, it is respectfully submitted that the remarks listed above are also applicable to Claim 2. For at least these same reasons, it is respectfully submitted that Claims 2 and 16 are allowable over the prior art of record – including Chung, and withdrawal of the rejections thereto is respectfully requested.

It is further noted that Claim 3 was cancelled in a previous response, rendering moot the applied rejection.

Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov and in view of Birum as applied in Claim 1 in view of Chung and further in view of Ruhlen et al., U.S. Patent No. 6,665,824 (hereafter “Ruhlen”).

Ruhlen discloses a system for gathering and receiving a large number of error reports. However, Ruhlen does not teach that for which it is relied upon, much less cure the deficiencies cited above with regards to Arbouzov in view of Birum. For example, the repository (235) does not teach or suggest “one or more source code modifications made in response to the errors”. The failure information does not include such detail. Version numbers are not noted as being “in response to” a bug ID. Rather, they are merely commonly included in the failure information (col. 6, line 66-col. 7, line 3). The relationship necessary to meet the limitations of Claim 4 is absent. Also, similar to Birum cited above, it is at best unclear how the errors noted in Ruhlen would be combinable with the token source and destination gathering system of Arbouzov. For at least these as well as the reasons listed above with regard to parent Claim 1, it is respectfully submitted that Claims 4 and 5 are allowable over the prior art of record – including Ruhlen, and withdrawal of the rejections thereto is respectfully requested.

Claims 7-9 and 13-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov as applied in Claim 1 in view of Chung in view of Ruhlen further in view of Leung, U.S. Patent No. 6,769,114 (hereafter “Leung”).

Leung discloses a system for preventing modifications to software from invalidating previously passed integration tests. However, similar to the reasoning cited above with regard to Birum, it is at best unclear how the integrations testing errors noted in Leung would be combinable with the compilation-based, token “source” and “destination” gathering system of Arbouzov. For at least this as well as the reasons further listed above with regard to parent Claim 1, it is respectfully submitted that Claims 7-9 and 13-14 are allowable over the prior art of record – including Leung, and withdrawal of the rejections thereto is respectfully requested.

It is further noted that this rejection does not explicitly cite Birum as a grounds of rejection, even though Birum was applied in at least the rejection of the parent claim, Claim 1. Clarification of the grounds of rejection is respectfully requested.

Claims 10-12 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov and in view of Birum in view of Chung in view of Ruhlen further in view of Hanson, U.S. Patent No. 5,946,493 (hereafter "Hanson").

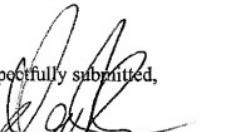
Hanson discloses a system for associating source code listings with optimized listings of object codes. However, it is respectfully submitted that Hanson also fails to teach or suggest all aspects of the claimed "one or more errors" as are further represented in the limitations discussed above for parent Claim 1. Thus, for at least these same reasons, it is respectfully submitted that Claims 10-12 and 17-21 are allowable over the prior art of record – including Hanson. Withdrawal of the rejections thereto is respectfully requested.

CONCLUSION

In view of the above amendment, applicant's representative believes the pending application is in condition for allowance.

Dated: November 27, 2007

Respectfully submitted,

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